

Please provide the following information, and submit to the NOAA DM Plan Repository.

Reference to Master DM Plan (if applicable)

As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

1. General Description of Data to be Managed**1.1. Name of the Data, data collection Project, or data-producing Program:**

AFSC/ABL: Ocean Acidification in Southeast Alaska

1.2. Summary description of the data:

This database contains information from one primary project a Southeast Alaska (SEAK) environmental monitoring study. It also includes support analyses for Kodiak crab studies (larvae, seawater), and miscellaneous ancillary studies: 1) a bottle storage experiment, 2) a diurnal carbon study, 3) and a euphausiid (krill) study.

1.3. Is this a one-time data collection, or an ongoing series of measurements?

One-time data collection

1.4. Actual or planned temporal coverage of the data:

2007-05 to 2013-07

1.5. Actual or planned geographic coverage of the data:

W: -146.8, E: -134.57, N: 60.72, S: 57.04

Alaska, Gulf of Alaska, Southeast Alaska, Prince William Sound, Kodiak

1.6. Type(s) of data:

(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)
maps and data

1.7. Data collection method(s):

(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)

Instrument: unknown

Platform: unknown

Physical Collection / Fishing Gear: unknown

1.8. If data are from a NOAA Observing System of Record, indicate name of system:**1.8.1. If data are from another observing system, please specify:**

2. Point of Contact for this Data Management Plan (author or maintainer)**2.1. Name:**

Metadata Coordinators MC

2.2. Title:

Metadata Contact

2.3. Affiliation or facility:**2.4. E-mail address:**

AFSC.metadata@noaa.gov

2.5. Phone number:**3. Responsible Party for Data Management**

Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.

3.1. Name:

Mark Carls

3.2. Title:

Data Steward

4. Resources

Programs must identify resources within their own budget for managing the data they produce.

4.1. Have resources for management of these data been identified?

Yes

4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):

Unknown

5. Data Lineage and Quality

NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.

5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible

(describe or provide URL of description):

Process Steps:

- Water samples were collected at each location and depth with Niskin bottles and stored as described by Dickson et al. (2009) except they were not poisoned with

mercuric chloride. Water was filtered through 53 m nylon sleeves placed around the exit hose on the Niskin bottle as it was collected from bottom to top with 0.5 to 1 volume overflow in pre-cleaned BOD (biological oxygen demand) bottles (after rinsing). The glass-stoppered BOD bottles were sealed with Apiezon L grease, refrigerated, and analyzed within 2 w of collection. Observation parameters did not change measurably within the 2 week measurement period. Additional water was collected unfiltered for chlorophyll measurement in brown Nalgene bottles (250 ml). Chlorophyll samples were refrigerated, filtered within 24 h of collection (0.7 m glass microfiber Whatman GF/F), placed in cryovials and stored at -80C pending analysis.

- Water samples were analyzed for pH, total alkalinity (TA), total dissolved inorganic carbon (TC) and salinity with the methods of Dickson et al. (2009). Quality assurance measures were included daily with every group of samples. These measures included sample replicates for precision and for accuracy, certified reference material (CRM) for TA, TC, and salinity (Oceanic CO₂ Quality Control - Marine Physical Laboratory, Scripps Institution of Oceanography, CA).
- pH was measured in 10 cm cells with the indicator dye m-cresol purple in a UV/visible spectrophotometer (Model 8453, Agilent Technologies). A tris buffer solution in synthetic seawater served as the CRM (Oceanic CO₂ Quality Control - Marine Physical Laboratory, Scripps Institution of Oceanography, CA). Typical precision, measured as the coefficient of variation, was 0.08%. Typical accuracy was 0.06%.
- Total alkalinity was initially measured by the open cell titration method with a Dosimat autopipette (Metrohm) through August 2011 and thereafter with a QC Titration Module a Titrator System (Mantech Associates Inc.). A series of pH buffer solutions was used to calibrate the Ross pH probe (Thermo Scientific) and the probe was subsequently soaked in filtered seawater for 1 h before sample measurement. A 0.7 M NaCl solution was used as a rinse between seawater sample measurements. Conditioning soaks were not used with the manual TA analysis approach. Typical precision was 3.6% with the Dosimat and 0.5% with the Mantech. Typical accuracy was 1.3% with the Dosimat and 0.7% with the Mantech.
- Total dissolved inorganic carbon was measured with a CO₂ Coulometer (CM5014, UIC Inc.) and Acidification Module (CM5130, UIC Inc.; Dickson et al. 2009). Each 20 g water sample was acidified with 6 ml of 1.5 M phosphoric acid to release the inorganic carbon as CO₂ gas. An electrochemical cell with cathode/anode solutions and potassium iodide salt was used to measure the amount of CO₂ (g C). Potassium hydroxide (45%) was used as a pre-scrubber and acidified potassium iodide (50% to pH 3) as a post-scrubber on the acidification module. High and low concentrations of sodium carbonate were used to calibrate the Coulometer, and a slope calibration factor was applied to each inorganic carbon value (Goyet and Hacker 1992). Typical precision and accuracy were 0.9 and 0.5%, respectively.
- Chlorophyll a was measured as described by (Parsons, Maita et al. 1984) in a fluorometer (TD 700, Turner Designs). Each sample was measured twice and results averaged. Salinity was measured with an AutoSal (Model 8400B, Guildline Instruments Limited). Each sample was measured in triplicate and results averaged.

Typical precision and accuracy were 0.7 and 7%, respectively.

- Calcite and aragonite saturation levels were calculated from pH and TC measurements with the CO2sys (Lewis and Wallace). Alternative calculations as a function of TA and TC were also completed.

5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:

5.2. Quality control procedures employed (describe or provide URL of description):

N/A

6. Data Documentation

The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.

6.1. Does metadata comply with EDMC Data Documentation directive?

Yes

6.1.1. If metadata are non-existent or non-compliant, please explain:

6.2. Name of organization or facility providing metadata hosting:

NMFS Office of Science and Technology

6.2.1. If service is needed for metadata hosting, please indicate:

6.3. URL of metadata folder or data catalog, if known:

<https://inport.nmfs.noaa.gov/inport/item/26972>

6.4. Process for producing and maintaining metadata

(describe or provide URL of description):

Metadata produced and maintained in accordance with the NMFS Data Documentation Procedural Directive: <https://inport.nmfs.noaa.gov/inport/downloads/data-documentation-procedural-directive.pdf>

7. Data Access

NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.

7.1. Do these data comply with the Data Access directive?

Yes

7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?

7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:

7.2. Name of organization of facility providing data access:

Alaska Fisheries Science Center

7.2.1. If data hosting service is needed, please indicate:

yes

7.2.2. URL of data access service, if known:

<https://www.ncei.noaa.gov/>

7.3. Data access methods or services offered:

Contact Distributor for data access procedures.

7.4. Approximate delay between data collection and dissemination:

unknown

7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:

no delay

8. Data Preservation and Protection

The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.

8.1. Actual or planned long-term data archive location:

(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)

To Be Determined

8.1.1. If World Data Center or Other, specify:**8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:**

NCEI site yet to be determined

8.2. Data storage facility prior to being sent to an archive facility (if any):

Auke Bay Laboratories - Juneau, AK

8.3. Approximate delay between data collection and submission to an archive facility:
unknown

8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection

IT Security and Contingency Plan for the system establishes procedures and applies to the functions, operations, and resources necessary to recover and restore data as hosted in the Western Regional Support Center in Seattle, Washington, following a disruption.

9. Additional Line Office or Staff Office Questions

Line and Staff Offices may extend this template by inserting additional questions in this section.